UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,461	05/15/2001	Miska Hannuksela	059341-0260	8072

30542 7590 01/12/2009

FOLEY & LARDNER LLP
P.O. BOX 80278
SAN DIEGO, CA 92138-0278

EXAMINER	
RAO, ANAND SHASHIKANT	
ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
01/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/854,461	HANNUKSELA ET AL.	
	Examiner	Art Unit	
	Andy S. Rao	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2006 and 23 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-2, 4-6, 9-12,14~22, 24-29, 31-33, 35-45, 47-54 and 56- 70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2, 4-6, 9-12,14~22, 24-29, 31-33, 35-45, 47-54 and 56- 70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's arguments, see the Amendment filed on 12/5/06, and the Interview Summary conducted on 5/23/07, with respect to the rejection(s) of claim(s) 1,2, 4-6, 9-12, 14-22, 24-29, 31-33, 35-45, 47-54 and 56- 70 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the newly discovered art to Fukuhara et al., (US Patent: 5,926,225 hereinafter referred to as "Fukuhara").

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-2, 4-6, 9, 14-22, 25-29, 31, and 64-65 are rejected under 35 U.S.C. 101 as not falling within one of four statutory categories of inventions. Supreme Court precedent and recent Federal Circuit decisions indicate a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example there is no apparatus mentioned either in the preamble nor in the subsequent limitations for executing the method, nor

is the selection of a selection of an alternative reference picture considered transforming the signal, *In re Bilski, 88 USPQ2d 1385 (Fed. Cir. 2008).*

Corrections to the claims and supporting specification are required.

4. Claims 54 and 56-63 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

A). Claim 54 recites a signal claim per se, showing no practical application and as such does not fall within the statutory classes set forth in 35 U.S.C. 101. Even though claim 54 has been amended to include "recorded on a carrier medium" among other features, the preamble still calls for a signal claim and there is no sufficient structure by itself or in combination with the signal claimed showing any practical application. A claimed signal is not a "process" under 35 U.S.C. 101 because it is not a series of steps. A claimed signal has no physical structure, does not itself perform any useful, concrete, and tangible result, and thus, does not fit within the definition of a machine. A claimed signal is not matter, and therefore is not a composition of matter. A product is a tangible physical article or object, some form of matter, which a signal is not. A signal does not fall within the definition of manufacture. Thus, the signal claim as recited in claim 54 does not fall within one of the four statutory classes of 35 U.S.C. 101. And since dependent claims 56-63 are directed to further limitations showing no practical application, claims 54, and 56-63 as a whole does not fall within the statutory classes set forth in 35 U.S.C. 101.

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application

claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);* and *In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).* A timely filed terminal disclaimer in compliance with 37 CFR 1.321 (c) or 1.321 (d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 10, 36-41, 53, and 69 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 33, 37-40, 43, 44, 50, and 51 of copending Application No. 10/138,178. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 10, and 36-41 are broader in scope than claims 33, 37-40, 43, and 44 of'178; claim 53 is broader in scope than claim 50 of '178; and claim 69 is broader in scope than claim 51 of'178.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 9-11, 14, 16, 22, 28, 39, 45, 51, 53, 54, 60, and 68-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al., (US Patent: 6,683,988 hereinafter referred to as "Fukunaga") in view of Fukuhara et al., (US Patent: 5,926,225 hereinafter referred to as "Fukuhara").

Fukunaga discloses a picture transmission system using minimal reference frame modification to recover from transmission errors as shown in figures 4 and 5, and the same method for encoding a video signal representing a sequence of pictures, multimedia terminal device comprising a video encoder encoding a video signal, video encoder for encoding a video signal, an encoded video signal recorded on a carrier medium, and an apparatus for encoding a video signal (Fukunaga: figure 4) as claimed in claims 10, 14, 16, 22, 39, 45, 53, 54, 60, and 69 comprising: wherein the video encoder is arranged to obtain a prediction for a current picture of the sequence or a part of the current picture from a local default reference picture (Fukunaga: column 4, lines 23-36: in interframe coding, coding unit 102 codes a block with reference to the corresponding block and/or one more neighboring blocks in the preceding frame, the corresponding block and/or neighboring blocks representing the local default reference picture); generate an indicator (Fukunaga: as provided by 107 of figure 4; column 5, lines 1-40) for the current picture or a part of the current picture (Fukunaga: column 4, lines 61-67; column 5, lines 1-40); transmit the indicator (Fukunaga: as provided by 107 of Figure 4) for use in the subsequent remote decoding process when decoding the current picture or the part of the current picture; generating the indicator to indicate the temporal reference, providing the indicator with the current picture or the part of the current picture, wherein the video encoder is arranged to generate the indicator by using the temporal reference (Fukunaga: column 4, lines 23-36; column

5, lines 1-40). However, Fukunaga fails to disclose the feature of the indicator identifying an alternative reference picture for the prediction of the current picture when a remote default reference picture corresponding to the local default reference picture cannot be reconstructed in a subsequent remote decoding process and wherein the video encoder is arranged to generate the indicator by using the temporal reference of the alternative reference picture, as in the claims. Fukuhara discloses the use of a local default reference picture and an alternate reference picture (Fukuhara: column 5, lines 1-10: STRM and LTRM elements) and associated indicators (Fukuhara: column 12, lines 34-64) as a part of a motion compensation apparatus and method (Fukuhara: column 5, lines 10-30) in order to accurately provide for motion compensation when scene changes are detected (Fukuhara: column 3, lines 25-52). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of invention to have taken the Fukuhara use of both short term and long term reference pictures in motion compensation processing into the Fukunaga apparatus in order to have the Fukunaga apparatus accurately provide for motion compensation in the presence of detected scene changes. The Fukunaga apparatus, now incorporating the Fukuhara teaching of the use of the STFM and LTFM elements, has all of the features of claims 10, 14, 16, 22, 39, 45, 53, 54, 60, and 69.

Fukunaga shows the same method for decoding an encoded video signal representing a sequence of pictures, video decoder, multimedia terminal device, and apparatus for decoding an encoded video signal representing a sequence of pictures as claimed in claims 9, 11, 28, 51, 68, and 70 comprising: the same receiving a part of the encoded video signal representing a current picture of the sequence or a part of the current picture, determining that a default reference picture to be used in obtaining a prediction for the current picture or the part of the current

picture cannot be reconstructed, examining an indicator provided for the current picture or the part of the current picture (Fukunaga: column 5, lines 42-67; column 6, lines 1-47); using the indicator to identify the temporal reference (see column 4, lines 23-36, column 5, lines 1-40), as in the claims. However, Fukunaga fails to disclose the steps of using the indicator for identifying an alternative reference picture for the prediction of the current picture when a remote default reference picture corresponding to the local default reference picture cannot be reconstructed in a subsequent remote decoding process and generating the indicator by using the temporal reference of the alternative reference picture, as in the claims. Fukuhara discloses the use of a local default reference picture and an alternate reference picture (Fukuhara: column 5, lines 1-10: STRM and LTRM elements) and associated indicators (Fukuhara: column 12, lines 34-64) as a part of a motion compensation apparatus and method (Fukuhara: column 5, lines 10-30) in order to accurately provide for motion compensation when scene changes are detected (Fukuhara: column 3, lines 25-52). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of invention to have taken the Fukuhara use of both short term and long term reference pictures in motion compensation processing into the Fukunaga method in order to have the Fukunaga method accurately provide for motion compensation in the presence of detected scene changes. The Fukunaga method, now incorporating the Fukuhara teaching of the use of the STFM and LTFM elements, has all of the features of claims 9, 11, 28, 51, 68, and 70.

9. Claims 1, 4, 19, 24, 32, 35, 42, 47, 56, 64, 65, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al., (US Patent: 6,683,988 hereinafter referred to as "Fukunaga") in view of Fukuhara et al., (US Patent: 5,926,225 hereinafter referred to as

"Fukuhara"), as applied to claims 9-11, 14, 16, 22, 28, 39, 45, 51, 53, 54, 60, and 68-70 above, and further in view of Hurst of record (US Patent: 6,188,728 hereinafter referred to as "Hurst").

The Fukunaga-Fukuhara combination discloses substantially the same encoding and decoding as above, further including more than one indicator (Fukunaga: as provided by 107 of Figure 4) provided for the current picture or the part of the current picture; wherein the video encoder is arranged to identify more than one alternative reference picture for the current picture or the part of the current picture by comparing the local default reference picture with a plurality of further reference pictures, and output an indicator for each further reference picture that meets the predetermined criterion to provide more than one indicator for the current picture or the part of the current picture (see column 4, line 61 to column 5, line 40). However, the Fukunaga-Fukuhara combination does not particularly disclose the following: (a) identifying the alternative reference picture for the current picture or the part of the current picture by comparing the local default reference picture with a further reference picture to calculate a measure of similarity between the two, comparing the measure of similarity against a predetermined criterion, generating an indicator based on the comparison, calculating the measure of similarity as a sum of absolute differences using differences in pixel values between the local default reference picture and a further reference picture as claimed in claims 1, 19, 32, 42, and 64; and (b) the indicators are included in the encoded video signal according to a ranking order, the indicator identifying the picture having the closest similarity to the default reference picture being placed first in the ranking order, examining a ranking order of more than one indicator provided for the current picture or the part of the current picture and selecting an indicator based on the ranking order, ranking the further reference pictures based on the comparison and providing the more

than one indicator for the current picture or the part of the current picture in ranking order, the indicator associated with the further reference picture having the closest similarity to the local default reference picture being placed first in the ranking order as claimed in claims 24, 35, 47, 56, 65, and 67. Regarding (a) and (b), Hurst discloses a block motion video coding and decoding as shown in Figures 1-3, and teaches the conventional use of a sum of absolute pixel difference similarity measure for a plurality of reference blocks in order to identify the reference block that most closely matches the current block of image data (Hurst: column 4, lines 26-46). Since Hurst has the capability of distinguishing between the various references blocks to determine the most closely matched block, it is hence considered obvious there is some sort of ranking factor within the block matching to rank the similarity measures obtained so as to identify the one or ones that match the current block the closest and so that the closest similarity is ranked first in the order of ranking. Therefore, it would have been obvious to one of ordinary skill in the art, having the Fukunaga, Fukuhara, and Hurst references in front of him/her and the general knowledge of block matching techniques through similarity measures, would have had no difficulty in providing a ranking of the plurality of reference pictures according to a sum of absolute pixel difference similarity measurements as taught by Hurst as part of the motion estimation within the Fukunaga-Fukuhara combination for the same well known identification by rank of the closest matched reference blocks first in the order of rank for the current block purposes as claimed. The Fukunaga apparatus and method, now incorporating the Fukuhara teaching of the use of the STFM and LTFM elements and steps and the use of SAD calculations as taught by Hurst, has all of the features of claims 9, 11, 28, 51, 68, and 70.

10. Claims 5, 15, 25, 26, 36, 37, 48, 49, 57, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al., (US Patent: 6,683,988 hereinafter referred to as "Fukunaga") in view of Fukuhara et al., (US Patent: 5,926,225 hereinafter referred to as "Fukuhara"), as applied to claims 9-11, 14, 16, 22, 28, 39, 45, 51, 53, 54, 60, and 68-70 above, and further in view of Sun et al of record (US Patent: 5,455,629 hereinafter referred to as "Sun").

The Fukunaga-Fukuhara combination discloses substantially the same encoding and decoding as above, but does not particularly disclose wherein the video encoder is arranged to include the indicator in a picture header of the encoded video signal, the video encoder is arranged to include the indicator in a picture segment header or a macroblock header of the encoded video signal when the indicator is associated with a part of the current picture, the video decoder is arrange to obtain the indicator from a picture header of the encoded video signal, the video decoder is arranged to obtain the indicator form a picture segment header or a macroblock header of the encoded video signal as claimed in claims 5, 15, 25, 26, 36, 37, 48, 49, 57, and 58. The particular use of picture headers for including indicators are however old and well recognized in the art, as exemplified by the tertiary reference (Sun: column 2, line 33-67; column 3 , lines 1-4; column 8, lines 65-67; column 9, lines 1-32). Therefore, it would have been obvious to one of ordinary skill in the art, having the Fukunaga, Fukuhara, and Sun references in front of him/her and the general knowledge of picture header data, would have had no difficulty in providing the picture header formatting including the indicator as taught by Sun et al for the video encoder of the Fukunaga-Fukuhara combination for the same well known compliance with the MPEG protocol and so that the receiving decoder may properly decode the video data purposes as claimed. The Fukunaga apparatus and method, now incorporating the Fukuhara

teaching of the use of the STFM and LTFM elements and steps and the use of headers as taught by Sun, has all of the features of claims 5, 15, 25, 26, 36, 37, 48, 49, 57, and 58.

11. Claims 6, 27, 38, 50, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al., (US Patent: 6,683,988 hereinafter referred to as "Fukunaga") in view of Fukuhara et al., (US Patent: 5,926,225: hereinafter referred to as "Fukuhara"), as applied to claims 9-11, 14, 16, 22, 28, 39, 45, 51, 53, 54, 60, and 68-70 above, and further in view of ITU-Telecommunications Standardization Sector (Proposed Draft of modified Annex L including Copyright, normative Error Concealment, and Exact IDCT Signaling).

The Fukunaga-Fukuhara combination discloses substantially the same encoding and decoding as above, but does not particularly disclose wherein the video encoder is arranged to encode the video signal according to the H.263 video compression standard and to include the indicator in the supplemental enhancement information in accordance with the H.263 video compression standard, wherein the video decoder is arranged to obtain the indicator from supplemental enhancement information of an encoded signal encoded according to the H.263 video compression standard as claimed in claims 6, 27, 38, 50, and 59. Such technical features are however well known and made obvious by ITU-Telecommunications Standardization Sector (see version 3 extensions, pages 1-5). Therefore, it would have been obvious to one of ordinary skill in the art, having the Fukunaga, Fukuhara, and ITU-Telecommunications Standardization Sector references in front of him/her and the general knowledge of video compression standards and recommendations, would have had no difficulty in providing the H.263 recommendation with Supplemental Enhancement Information as taught by the ITU-Telecommunications Standardization Sector reference for the video coder of the Fukunaga-Fukuhara combination so

that the video signal encoded by the Fukunaga-Fukuhara combination may be encoded according to the H.263 recommendation and the associated indicator of the Fukunaga-Fukuhara combination may be included in the Supplemental Enhancement Information for the same well known compliance with the MPEG standard purposes as claimed. The Fukunaga apparatus and method, now incorporating the Fukuhara teaching of the use of the STFM and LTFM elements and steps and the ITU-Telecommunications Standardization Sector reference's indicator insertion into the Supplemental Enhancement Information, has all of the features of claims 6, 27, 38, 50, and 59.

12. Claims 2, 17-18, 29, 33, 40, 41, 61, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al., (US Patent: 6,683,988 hereinafter referred to as "Fukunaga") in view of Fukuhara et al., (US Patent: 5,926,225 hereinafter referred to as "Fukuhara"), as applied to claims 9-11, 14, 16, 22, 28, 39, 45, 51, 53, 54, 60, and 68-70 above, and further in view of Yagasaki of record (US Patent: 5,515,388 hereinafter referred to as "Yagasaki").

The Fukunaga-Fukuhara combination discloses substantially the same encoding and decoding as above, further including wherein the encoder is arranged to compare the first local default reference picture with a further reference picture corresponding to a picture of the sequence occurring temporally before the current picture with at least one further picture of the sequence occurring temporally before the current picture to calculate a measure of similarity between the two, and comparing the measure of similarity against a predetermined criterion, and generate the indicator based on the comparison (Fukunaga: interframe coding within 102 of figure 4; column 3, lines 47-60; column 4, lines 23-36 and 61-67; column 5, lines 1-41), as in claims 2, 17-18, 29, 33, 40, 41, 61, and 62. However, the Fukunaga-Fukuhara combination does

not particularly disclose wherein the video coder is arranged to form a prediction of at least part of the current picture from a first local default reference picture and a second local default reference picture corresponding to a picture of the sequence occurring temporally before the current picture and the second local default reference picture corresponding to a picture of the sequence occurring temporally after the current picture, wherein the video encoder is arranged to indicate alternative reference pictures for B pictures and P pictures, wherein the video encoder is arranged to indicate alternative reference pictures only for P pictures as claimed in claim 2, 17, 18, 29, 33, 40, 41, 61, and 62. Yagasaki discloses an apparatus and method for preventing repetitive random errors in transform coefficients as shown in Figure 1, and teaches the conventional use of reference frames temporally before and after the current frame for predicting a current B frame (i.e., B frame prediction, see column 4, lines 45-53), and the particular P frame predictions (see column 4, lines 41-44). One of ordinary skill in the art would consider it obvious to provide the B and P current frame predictions from Yagasaki as the specific current picture predictions within the Fukunaga-Fukuhara combination in order to provide the B and P current frame predictions of Yagasaki within the Fukunaga-Fukuhara combination, and since Fukuhara teaches the particular use of alternative reference pictures for current pictures (Fukuhara: column 5, lines 1-10), the video encoder of the Fukunaga-Fukuhara combination may therefore obviously be arranged to indicate alternative reference pictures for B pictures and P pictures, and arranged to indicate alternative reference pictures only for P pictures as claimed. Therefore, it would have been obvious to one of ordinary skill in the art, having the Fukunaga, Fukuhara, and Yagasaki references in front of him/her and the general knowledge of B and P frame predictions within video encoders, to provide the B and P current frame predictions of Yagasaki within the

Fukunaga-Fukuhara combination so that the video encoder of the Fukunaga-Fukuhara combination may be arranged to indicate alternative reference pictures for B pictures and P pictures, and arranged to indicate alternative reference pictures only for P pictures for the same well known B and P picture predictive processing purposes as claimed. The Fukunaga apparatus and method, now incorporating the Fukuhara teaching of the use of the STFM and LTFM elements and steps and the Yagasaki teaching of alternative reference indication for both B and P pictures in tandem or for P pictures only, has all of the features of claims 2, 17-18, 29, 33, 40, 41, 61, and 62.

13. Claims 12, 21, 31, 44, 52, 63, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al., (US Patent: 6,683,988 hereinafter referred to as "Fukunaga") in view of Fukuhara et al., (US Patent: 5,926,225 hereinafter referred to as "Fukuhara"), as applied to claims 9-11, 14, 16, 22, 28, 39, 45, 51, 53, 54, 60, and 68-70 above, and further in view of Yamaguchi et al of record (US 2002/0009141 A1: hereinafter referred to as "Yamaguchi").

The Fukunaga-Fukuhara combination discloses substantially the same encoding and decoding as above, but does not particularly disclose a radio telecommunications device and scalably encoding the video signal and indicating alternative reference pictures for predictively encoded enhancement layer pictures of the scalable encoded video signal, using the indicator to identify alterative reference pictures for predictively encoded enhancement layer pictures of a scalable encoded video signal, the video decoder is arranged to use the indicator to identify alternative reference pictures for predictively encoded enhancement layer pictures of a scalably encoded video signal as claimed in claims 12, 21, 31, 44, 52, 63, and 66. However, Yamaguchi

discloses a video encoding and decoding apparatus as shown in figures 1-4, and teaches the conventional radio communication means for the transmission and reception of compressed video data (see Figure 15A, page 19, sections [0289], [0291], [0293], [0294]) as well as the scalable video coding and decoding, and enhancement layer video coding and decoding (see sections [0008] to [0012], [0039], [0040]). Therefore, it would have been obvious to one of ordinary skill in the art, having the Fukunaga, Fukuhara, and Yamaguchi references in front of him/her and the general knowledge of video coding and decoding, and transmission of video compressed data, to provide the radio communication means of Yamaguchi as the specific means for transmitting the video data of the Fukunaga-Fukuhara combination to a video decoder as well as the scalable and enhancement video coding and decoding as taught by Yamaguchi within the video coder of Fukunaga-Fukuhara combination so that the video encoder of the Fukunaga-Fukuhara combination may be arranged to encode the video signal as a scalable video sequence and indicate alternative reference pictures for predictively encoded enhancement layer pictures of the scalable video signal by using the indicator of the Fukunaga-Fukuhara combination to identify alternative reference pictures for predictively encoded enhancement layer pictures of a scalably encoded video signal, and so that the video decoder of the Fukunaga-Fukuhara combination may perform the complementary scalable and enhancement video decoding for compliance with the MPEG standard as claimed. The Fukunaga apparatus and method, now incorporating the Fukuhara teaching of the use of the STFM and LTFM elements and steps and the Yamaguchi radio communication teaching, has all of the features of claims 2, 17-18, 29, 33, 40, 41, 61, and 62.

14. Claims 20 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al., (US Patent: 6,683,988 hereinafter referred to as "Fukunaga") in view of Fukuhara et al., (US Patent: 5,926,225: hereinafter referred to as "Fukuhara") and Hurst (US Patent: 6,188,728 hereinafter referred to as "Hurst") as applied to claims 1, 4, 9-11, 14, 16, 19, 22, 24, 28, 32, 35, 39, 42, 45, 47, 51, 53, 54, 56, 60, 64, 65, and 68-70 above, and further in view of Normile (US Patent: 6,438,165 hereinafter referred to as "Normile").

The Fukunaga-Fukuhara-Hurst combination discloses substantially the same encoding and decoding as above, but does not particularly disclose wherein the video encoder is arranged to assess the similarity between the local default reference picture and a further reference picture using picture histograms as claimed in claims 20 and 43. Such technical features are however made obvious in view of the tertiary reference (Normile: column 6, lines 5-67). Therefore, it would have been obvious to one of ordinary skill in the art, having the references in front of him/her and the general knowledge of the comparison of current and reference frames for similar matches within video encoders, to incorporate the picture histograms of Normile for the similarity matching within the Fukunaga-Fukuhara combination so that the video encoder of Fukunaga-Fukuhara combination can assess the similarity measures between the default reference picture and a further picture within the Fukunaga-Fukuhara combination for the same well known prediction of video frames purposes as claimed. The Fukunaga apparatus and method, now incorporating the Fukuhara teaching of the use of the STFM and LTFM elements and steps and the use of SAD calculations as taught by Hurst and the Normile histogram teaching, has all of the features of claims 20 and 43.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andy S. Rao
Primary Examiner
Art Unit 2621

asr
/Andy S. Rao/
Primary Examiner, Art Unit 2621
January 6, 2009